

09/897,572

Appl. No. 09/897,572
Atty. Docket No. 7949
Amdt. dated May 3, 2004
Reply to Office Action of February 3, 2004
Customer No. 27752

38. (original) A composition according to Claim 3 wherein said nonlinear primary aliphatic Oxo alcohols are substantially free from methyl butanols, ethylhexanols, propylheptanols, natural alcohol mixtures, aminoalcohols, aromatic alcohols, glycols having linear hydrocarbon chains, alcohols comprising the aldol condensation product of aldehydes; alcohols comprising the Oxo product of linear internal olefins, and alcohols comprising quaternized carbon and consisting of the Oxo product of acid-catalyzed propylene / butylene oligomerization.
39. (original) A composition according to Claim 10 wherein said nonlinear primary aliphatic Oxo alcohols are substantially free from methyl butanols, ethylhexanols, propylheptanols, natural alcohol mixtures, aminoalcohols, aromatic alcohols, glycols having linear hydrocarbon chains, alcohols comprising the aldol condensation product of aldehydes; alcohols comprising the Oxo product of linear internal olefins, and alcohols comprising quaternized carbon and consisting of the Oxo product of acid-catalyzed propylene / butylene oligomerization.

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Claims 40-45 (canceled)

45. (original) A composition according to Claim 1 wherein said composition is in the form of a concentrated fuel additive and wherein said fuel hydrocarbons are substantially free from hydrocarbons other than Fischer-Tropsch - Oxo hydrocarbons.
46. (withdrawn) A composition according to Claim 18 wherein said composition is in the form of a concentrated fuel additive and wherein said fuel hydrocarbons are substantially free from hydrocarbons other than Fischer-Tropsch - Oxo hydrocarbons.
47. (withdrawn) A composition according to Claim 19 wherein said composition is in the form of a concentrated fuel additive and wherein said fuel hydrocarbons are substantially free from hydrocarbons other than Fischer-Tropsch - Oxo hydrocarbons.
48. (original) A composition according to Claim 1 wherein said composition is substantially free from native F.T. alcohols.

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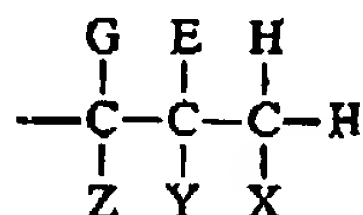
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49. (withdrawn) A composition according to Claim 18 wherein said composition is substantially free from native F.T. alcohols.

50. (withdrawn) A composition according to Claim 19 wherein said composition is substantially free from native F.T. alcohols.

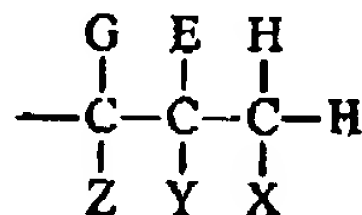
Claims 51-56 – (canceled)

57. (withdrawn) A composition wherein C_nH_{2n-2} is a linear saturated hydrocarbyl and K, L, Q and R are substituents; K and L are independently selected from:



wherein one of X and Y and Z is CH_2OH ; and according to Claim 18 wherein said nonlinear primary aliphatic Oxo alcohols are substantially the only lubricity-improving component.

58. (withdrawn) A composition wherein C_nH_{2n-2} is a linear saturated hydrocarbyl and K, L, Q and R are substituents; K and L are independently selected from:



wherein one of X and Y and Z is CH_2OH ; and according to Claim 19 wherein said nonlinear primary aliphatic Oxo alcohols are substantially the only lubricity-improving component.

59. (original) A composition according to Claim 1 wherein said nonlinear primary aliphatic alcohols are monohydric.

60. (original) A composition according to Claim 1 that is substantially free from diols.

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61. (original) A composition according to Claim 1 wherein said composition further comprises: (c) from 0.001 ppm to 30% of linear C₁₁ to C₂₁ alcohols.
62. (currently amended) A composition according to Claim ~~[[1]]~~ 3 further comprising:
(d) from 0.001 ppm to 30% of C₁₂ to C₂₂ nonlinear primary aliphatic diols.
63. (currently amended) A composition according to Claim ~~[[1]]~~ 3 further comprising
(e) from 0.0001 ppm to 3% of C₁₂ to C₂₂ linear primary aliphatic diols.
64. (currently amended) A composition according to Claim ~~[[1]]~~ 3 further comprising
(f) from 0.001 ppm to 30% of a mixture of members selected from:

linear C₁₁ to C₂₁ monoalcohols; C₁₂ to C₂₂ nonlinear primary aliphatic diols; and C₁₂ to C₂₂ linear primary aliphatic diols.
65. (currently amended) A composition according to Claim 1 further comprising:
(g) from 0.001 ppm to % of a fuel adjunct selected from
(I) diesel adjuncts comprising diesel ignition improvers, diesel stability improvers, diesel corrosion inhibitors, diesel detergent additives, diesel cold flow improvers, diesel combustion improvers, other conventional diesel adjuncts, and mixtures thereof; ~~[[and]]~~ or

(II) aviation fuel adjuncts comprising jet fuel ignition improvers, jet fuel stability improvers, jet fuel corrosion inhibitors, jet fuel detergent additives, jet fuel cold flow improvers, jet fuel combustion improvers, jet fuel luminosity reducers/radiation quenchers, jet fuel antimicrobial/antifungal adjuncts, jet fuel antistats, other conventional jet fuel adjuncts and mixtures thereof.
66. (canceled)

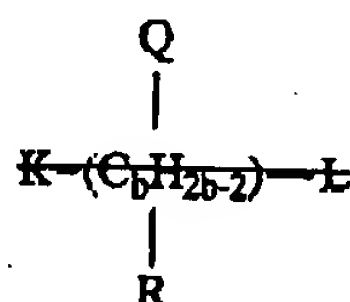
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67. (withdrawn) A method of transporting a composition according Claim 18 comprising pumping said composition in a pipeline under low ambient temperature conditions.
68. (withdrawn) A method of transporting a composition according Claim 19 comprising pumping said composition in a pipeline under low ambient temperature conditions.
69. (canceled)
70. (withdrawn) A method according to Claim 67 wherein said pumping is carried out batchwise and alternating with pumping of batches of conventional fuels in said pipeline.
71. (withdrawn) A method according to Claim 68 wherein said pumping is carried out batchwise and alternating with pumping of batches of conventional fuels in said pipeline.
72. (withdrawn) A process for making a fuel composition, said process comprising a step of blending:
(a) from 90% to 99.9% of fuel hydrocarbons having from 9 to 20 carbon atoms; and
(b) from 100 ppm to 10% of nonlinear primary aliphatic Oxo alcohols, wherein said alcohols are produced by the following stages:
- (I) a first stage comprising: providing a member selected from
 - (A) F.T. wax;
 - (B) conventional petroleum wax;
 - (C) a fuel hydrocarbon distillation cut in the Jet / diesel range, said distillation cut comprising at least 0.8 weight fraction of linear paraffins, mono-, di- or tri-C₁-C₃ branched acyclic paraffins, or mixtures thereof.
 - (D) mixtures thereof,
 - (II) a pre-Oxo stage comprising sequentially or concurrently delinearizing and preparing the product of the first stage for Oxo reaction, said stage comprising two or more steps in any order selected from steps capable of effecting (i) chain-breaking, (ii) branch-forming and (iii) olefin-forming; and

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(III) an Oxo/post-Oxo stage comprising converting the product of the pre-Oxo stage to said alcohol, said stage comprising at least one Oxo step and further optionally comprising an Oxo aldehyde to alcohol conversion step and / or a step of hydrogenation of residual olefins to paraffins.

73. (currently amended) A composition according to Claim 17 comprising nonlinear diols having the formula:



any of X and Y and Z which is not CH_2OH is H ;

~~b is an integer selected such that the total carbon content of said nonlinear diol is from 12 to 22;~~
~~E, G and Q are selected from H, methyl, ethyl, propyl and butyl provided that at least one of E, G and Q is not H;~~

~~and R is selected from H and methyl, preferably wherein said nonlinear diols are nonlinear Oxo diols, and wherein when Q and R are both different from H, Q and R are attached to different carbon atoms of said linear saturated hydrocarbon, more preferably said nonlinear primary aliphatic Oxo alcohols, (b), and said nonlinear diols, (d), are present at a ratio (b) : (d), of from 1000:1 to 2:1 by weight, preferably said nonlinear diols are present at a level of from 0.001 ppm to 30 % by weight.~~

74. (new) A composition according to Claim 1 wherein said composition comprises from 0.2% to 19% of said nonlinear primary aliphatic Oxo alcohol and from 81% to 99.8% of said fuel hydrocarbons; wherein said nonlinear primary aliphatic Oxo alcohols have an independently variable degree of branching, DOB_n , which exceeds the degree of branching of said fuel hydrocarbons, DOB_F , according to the relation: $\text{DOB}_n = \text{DOB}_F + 0.3$.

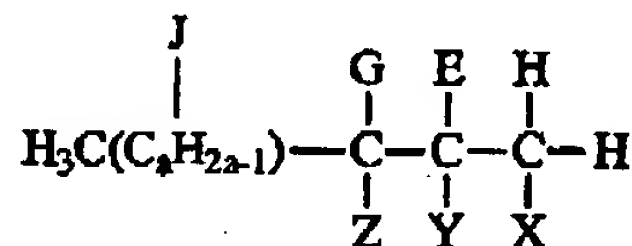
75. (new) A composition according to Claim 1 wherein said composition comprises from 5% to 90% of said fuel hydrocarbons and from 10% to 95% of said nonlinear primary aliphatic Oxo alcohol; wherein said fuel hydrocarbons are derived from Fischer Tropsch wax, petroleum wax and mixtures thereof, and said nonlinear primary aliphatic Oxo alcohol is in the form of a two-carbon alcohol cut selected from a C_{12} - C_{13} cut, a C_{14} - C_{15} cut and a C_{16} - C_{17} cut.

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76. (new) A composition according to Claim 1 wherein said composition comprises from 55 to 90% of said fuel hydrocarbons and from 10% to 95% of said nonlinear primary aliphatic Oxo alcohol wherein said fuel hydrocarbons are derived from Fischer Tropsch wax, petroleum wax and mixtures thereof, and said nonlinear primary aliphatic Oxo alcohol is in the form of a four-carbon alcohol cut selected from a C₁₄-C₁₇ cut.

77. (new) A composition according to Claim 15 wherein when Q and R are both different from H, and Q and R are attached to different carbon atoms of said linear saturated hydrocarbyl.

78. (new) A composition according to Claim 15 wherein said nonlinear primary aliphatic Oxo alcohols have the formula:



wherein one of X and Y and Z is CH₂OH;

any of X and Y and Z which is not CH₂OH is H;

E, G and J are selected from H and methyl provided that at least one of E, G and J is methyl; the moiety C_aH_{2a-1} is a linear saturated hydrocarbyl; and

a is an integer selected such that the total carbon content of said nonlinear primary aliphatic Oxo alcohol is from 11 to 21.

79. (new) A composition according to Claim 17 wherein said nonlinear diols are nonlinear Oxo diols, and wherein when Q and R are both different from H, Q and R are attached to different carbon atoms of said linear saturated hydrocarbyl.

80. (new) A composition according to Claim 3 comprising nonlinear diols, wherein said nonlinear primary aliphatic Oxo alcohols, (b), and said nonlinear diols, (d), are present at a ratio (b) : (d), of from 1000:1 to 2:1 by weight.

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81. (new) A composition according to Claim 80 wherein said nonlinear diols are present at a level of from 0.001 ppm to 30% by weight.